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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/802,895
Filing Date: March 12, 2001
Appellant(s): TSUJI, JUNICHI

Ruthleen E. Uy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 17 January 2006

appealing from the Office action mailed 14 June 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest
is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals,
interferences, or judicial proceedings which will directly
affect or be directly affected by or have a bearing on the
Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the
brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after
final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the
brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be
reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix
to the brief is correct.

(8) Evidence Relied Upon

5,276,472	Bell et al.	1-1994
5,684,262	Nakamura et al.	11-1997
5,495,468	Leveque	2-1996
4,270,853	Hatada et al.	6-1981
5,692,225	Bernardi et al.	11-1997
4,983,996	Kinoshita	1-1991
6,035,273	Spies	3-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the
appealed claims:

Claims 1-2 and 14-15 are rejected under 35 U.S.C. 103(a) as
being unpatentable over Bell (US Patent 5,276,472) in view of
Nakamura (US Patent 5,684,262).

Regarding claims 1 and 14: Bell discloses a printer
(figures 3 and 4 of Bell) for printing an image to recording
material (figure 4(35) of Bell) according to image data (column
5, lines 11-14 of Bell). Figure 3 and figure 4 show different

parts of the overall system taught by Bell (column 3, lines 3-11 of Bell).

Said printer comprises a speech data input unit (figure 3 (17) of Bell) for inputting speech data (column 4, lines 4-6 of Bell) associated with said image data for representing speech (column 4, lines 29-34 of Bell); and a speech data recorder (figure 4(43) of Bell) for recording the speech data to said recording material in association with said image (column 5, lines 30-35 of Bell).

Bell does not disclose expressly a voice tone converter for subjecting said speech data to tone conversion.

Nakamura discloses a voice tone converter (figure 1(16) of Nakamura) for subjecting speech data to tone conversion (column 5, lines 38-41 of Nakamura). Said voice tone converter performs operations under the control of a central processing unit (figure 1(21) and column 4, lines 50-51 of Nakamura).

Bell and Nakamura are combinable because they are from the same field of endeavor, namely the processing and recording of audio data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the tone converter taught by Nakamura in the printer taught by Bell. The recorded speech data would then be tone-converted speech data. The motivation for doing so would have been to control

the tone level based on the input level (column 5, lines 41-47

of Nakamura), thus improving the recorded audio signal.

Therefore, it would have been obvious to combine Nakamura with

Bell to obtain the invention as specified in claims 1 and 14.

Regarding claims 2 and 15: Bell does not disclose

expressly that said voice tone converter stores plural sets of

tone mode information; and a voice tone selector for selecting

one of said plural sets of said tone mode information, wherein

said voice tone converter subjects said speech data to tone

conversion according to said selected tone mode information.

Nakamura discloses that said voice tone converter stores

plural sets of tone mode information (column 4, lines 59-64 of

Nakamura). Since said voice tone converter can select between

plural sets of tone mode information (column 4, lines 59-64 of

Nakamura), it is inherent that said plural sets of tone mode

information are stored in some fashion. Otherwise, said plural

sets of tone mode information would not be accessible to said

voice tone converter.

Nakamura further discloses a voice tone selector (figure 1

(23) of Nakamura) for selecting one of said plural sets of said

tone mode information (column 5, lines 8-10 of Nakamura),

wherein said voice tone converter subjects said speech data to

tone conversion according to said selected tone mode information
(column 5, lines 10-15 of Nakamura).

Bell and Nakamura are combinable because they are from the
same field of endeavor, namely the processing and recording of
audio data. At the time of the invention, it would have been
obvious to a person of ordinary skill in the art to use a voice
tone selector to control the tone mode and the associated tone
mode information, as taught by Nakamura. The motivation for
doing so would have been to be able to select different desired
effects for the audio input signal (column 6, lines 35-42 of
Nakamura). Therefore, it would have been obvious to combine
Nakamura with Bell to obtain the invention as specified in
claims 2 and 15.

**Claims 3, 9, 16 and 26 are rejected under 35 U.S.C. 103(a)
as being unpatentable over Bell (US Patent 5,276,472) in view of
Nakamura (US Patent 5,684,262) and Leveque (US Patent
5,495,468).**

Regarding claims 3 and 16: Bell discloses sending speech
data to said speech data recorder (column 4, lines 13-17 of
Bell).

Bell does not disclose expressly that said voice tone
converter generates conversion data for tone conversion control,

and sends said conversion data to said speech data recorder; wherein said tone-converted speech data is constituted by said speech data before being converted and said conversion data.

Nakamura discloses that said voice tone converter generates conversion data for tone conversion control (column 5, lines 8-13 of Nakamura), and outputs both the tone-converted speech data and said speech data before being converted (column 4, lines 20-24 of Nakamura).

Bell and Nakamura are combinable because they are from the same field of endeavor, namely the processing and recording of audio data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to generate the tone conversion data and output both the tone-converted audio data and the unconverted audio data, as taught by Nakamura. The motivation for doing so would have been to compensate for the tone variations in the input signal (column 5, lines 41-47 of Nakamura). Therefore, it would have been obvious to combine Nakamura with Bell.

Bell in view of Nakamura does not disclose expressly that said voice tone converter sends said conversion data to said speech data recorder; wherein said tone-converted speech data is constituted by said speech data before being converted and said conversion data.

Leveque discloses sending conversion data (figure 5a(CT_1)
and column 5, lines 14-17 of Leveque) to an output device
(column 5, lines 25-29 of Leveque); and that the audio data is
constituted by said speech data before being converted (figure
5a(CV_1); and column 5, lines 2-4 and lines 10-12 of Leveque) and
said conversion data (column 5, lines 25-29 of Leveque). The
conversion data ($CT_1...CT_N$) is output along with the compressed,
original voice data (column 5, lines 25-29 of Leveque) and used
to control the expanding of the compressed data (column 5, lines
52-55 of Leveque).

Bell in view of Nakamura is combinable with Leveque because
they are from the same field of endeavor, namely the control and
processing of audio data. At the time of the invention, it
would have been obvious to a person of ordinary skill in the art
to output the conversion data along with the audio data before
being converted, as taught by Leveque, said conversion data and
audio data being the conversion data and audio data taught by
Bell in view of Nakamura. The motivation for doing so would
have been that the conversion data can be saved in a different
frequency band than the audio data (column 5, lines 12-17 of
Leveque) and can therefore be saved in the same analog storage
space as the audio data. Therefore, it would have been obvious

to combine Leveque with Bell in view of Nakamura to obtain the invention as specified in claims 3 and 16.

Regarding claims 9 and 26: Bell discloses a printer (figures 3 and 4 of Bell) for printing an image to recording material (figure 4(35) of Bell) according to image data (column 5, lines 11-14 of Bell). Figure 3 and figure 4 show different parts of the overall system taught by Bell (column 3, lines 3-11 of Bell).

Said printer comprises a speech data input unit (figure 3 (17) of Bell) for inputting speech data (column 4, lines 4-6 of Bell) associated with said image data for representing speech (column 4, lines 29-34 of Bell); and a speech data recorder (figure 3(27) of Bell) for recording the speech data to said recording material in association with said image (column 4, lines 14-17 of Bell).

Bell does not disclose expressly a voice tone converter for generating conversion data for tone conversion control; and that said speech data controller records a combination of said speech data and said conversion data to said recording material.

Nakamura discloses a voice tone converter (figure 1(16) of Nakamura) generating conversion data for tone conversion control (column 5, lines 38-44 of Nakamura). Said voice tone converter

performs operations under the control of a central processing

unit (figure 1(21) and column 4, lines 50-51 of Nakamura).

Bell and Nakamura are combinable because they are from the

same field of endeavor, namely the processing and recording of

audio data. At the time of the invention, it would have been

obvious to a person of ordinary skill in the art to include the

tone converter taught by Nakamura in the printer taught by Bell.

The motivation for doing so would have been to control the tone

level based on the input level (column 5, lines 41-47 of Bell),

thus improving the recorded audio signal. Therefore, it would

have been obvious to combine Nakamura with Bell.

Bell in view of Nakamura does not disclose expressly that

said speech data controller records a combination of said speech

data and said conversion data to said recording material.

Leveque discloses outputting a combination of audio data

and conversion data (figure 5a and column 5, lines 25-29 of

Leveque). The conversion data ($CT_1...CT_N$) is output along with the

compressed, original voice data ($CV_1...CV_2$) (column 5, lines 25-29

of Leveque) and used to control the expanding of the compressed

data (column 5, lines 52-55 of Leveque).

Bell in view of Nakamura is combinable with Leveque because

they are from the same field of endeavor, namely the control and

processing of audio data. At the time of the invention, it

would have been obvious to a person of ordinary skill in the art

to output the conversion data along with the audio data before

being converted, as taught by Leveque, said conversion data and

audio data being the conversion data and audio data taught by

Bell in view of Nakamura and outputting said conversion data and

said speech data by recording as taught by Bell. The motivation

for doing so would have been that the conversion data can be

saved in a different frequency band than the audio data (column

5, lines 12-17 of Leveque) and can therefore be saved in the

same analog storage space as the audio data. Therefore, it

would have been obvious to combine Leveque with Bell in view of

Nakamura to obtain the invention as specified in claims 9 and

26.

Claims 17-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bell (US Patent 5,276,472) in view of Nakamura

(US Patent 5,684,262) and Kinoshita (US Patent 4,983,996).

Regarding claim 17: Bell discloses that said recording

material is photosensitive material (column 5, lines 11-12 of

Bell); and an image forming unit (figure 4(36) of Bell) for

optically printing said image to said recording material (column

5, lines 11-14 of Bell). Exposing developed film onto a strip

of photosensitive printing paper (column 5, lines 11-14 of Bell)

is inherently an optical printing process. Said image forming

unit further constituting said speech data recorder (column 5,

lines 20-25 of Bell) to print said speech data (column 5, lines

30-35 of Bell).

Bell in view of Nakamura does not disclose expressly that

said speech data is printed optically.

Kinoshita disclose optically printing speech data on a

photosensitive recording material (column 4, lines 58-63 of

Kinoshita).

Bell in view of Nakamura is combinable with Kinoshita

because they are from the same field of endeavor, namely the

control and processing of audio data. At the time of the

invention, it would have been obvious to a person of ordinary

skill in the art to record said speech data taught by Bell in an

optical form, as taught by Kinoshita. The motivation for doing

so would have been to be able to print the speech data directly

onto the film (column 5, lines 1-3 of Kinoshita). Therefore, it

would have been obvious to combine Kinoshita with Bell in view

of Nakamura to obtain the invention as specified in claim 17.

Regarding claim 18: Bell discloses that said image forming

unit prints said speech data in a bar code form (column 5, lines

35-38 of Bell).

Claim 19 is rejected under 35 U.S.C. 103(a) as being
unpatentable over Bell (US Patent 5,276,472) in view of Nakamura
(US Patent 5,684,262) and Hatada (US Patent 4,270,853).

Regarding claim 19: Bell in view of Nakamura does not
disclose expressly that said recording material includes a
magnetic recording region, and said speech data recorder
magnetically records said speech data.

Hatada discloses a speech data recorder (figure 5b(24) of
Hatada) that magnetically records speech data on recording
material that includes a magnetic recording region (figure 4b(8)
and column 4, lines 29-33 of Hatada).

Bell in view of Nakamura is combinable with Hatada because
they are from the same field of endeavor, namely the control and
processing of audio data. At the time of the invention, it
would have been obvious to a person of ordinary skill in the art
to use a speech data recorder that magnetically records the
speech data, as taught by Hatada. The motivation for doing so
would have been to be able to record voice or sound onto the
picture without having to carry a tape recorder (column 1, lines
28-32 of Hatada). Therefore, it would have been obvious to
combine Hatada with Bell in view of Nakamura to obtain the
invention as specified in claim 19.

Claims 4-7, 20-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (US Patent 5,276,472) in view of Nakamura (US Patent 5,684,262) and Bernardi (US Patent 5,692,225).

Regarding claims 4, 5 and 20: Bell in view of Nakamura does not disclose expressly a speech/text converter for converting said speech data from said speech data input unit into text data for representing text; and a text data recorder for recording said text data to said recording material in association with said image.

Bernardi discloses a speech/text converter (figure 5(52) of Bernardi) for converting said speech data from said speech data input unit into text data for representing text (column 9, lines 1-6 of Bernardi); and a text data recorder (figure 5(43) of Bernardi) for recording said text data to said recording material in association with said image (column 9, lines 6-9 of Bernardi).

Bell in view of Nakamura is combinable with Bernardi because they are from the same field of endeavor, namely the control and processing of audio data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the speech/text converter and text data recorder taught by Bernardi in the printer taught by Bell

in view of Nakamura. The motivation for doing so would have been to be able to make printed annotations based on spoken notes (column 9, lines 37-40 of Bernardi). Therefore, it would have been obvious to combine Bernardi with Bell in view of Nakamura to obtain the invention as specified in claims 4, 5 and 20.

Further regarding claim 20: The printer of claim 20 comprises all of the limitations of claims 4 and 5.

Regarding claims 6 and 21: Bell in view of Nakamura does not disclose expressly a text data input unit, externally operable, for inputting text data for representing text; and a text data recorder for recording said text data to said recording material in association with said image.

Bernardi discloses a text data input unit (figure 7(62) of Bernardi), externally operable, for inputting text data for representing text (column 10, lines 21-26 of Bernardi); and a text data recorder (figure 7(43) of Bernardi) for recording said text data to said recording material in association with said image (column 9, lines 3-9 of Bernardi). Said text data input unit scans in a card that must be put into said text data input unit (column 10, lines 22-23 of Bernardi). Therefore, said text data input unit is externally operable.

Bell in view of Nakamura is combinable with Bernardi because they are from the same field of endeavor, namely the control and processing of audio data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the text data input unit and text data recorder taught by Bernardi in the printer taught by Bell in view of Nakamura. The motivation for doing so would have been to be able to make annotations to the resulting printed image from a simple hand-written card (column 10, lines 35-41 of Bernardi). Therefore, it would have been obvious to combine Bernardi with Bell in view of Nakamura to obtain the invention as specified in claims 6 and 21.

Further regarding claims 7 and 22: Bernardi discloses that said text data includes at least one of a letter, a number, and a sign (column 10, lines 22-24 of Bernardi). Optical character recognition (column 10, lines 22-24 of Bernardi) recognizes at least letters and numbers, since letters and numbers are part of the ASCII set.

Regarding claim 24: Bell discloses that said text data recorder prints said text data by use of ink, toner or dye (column 5, lines 35-36 of Bell).

Claim 23 is rejected under 35 U.S.C. 103(a) as being

unpatentable over Bell (US Patent 5,276,472) in view of Nakamura

(US Patent 5,684,262), Bernardi (US Patent 5,692,225), and

Kinoshita (US Patent 4,983,996).

Regarding claim 23: Bell discloses that said recording

material is photosensitive material (column 5, lines 11-12 of

Bell); and an image forming unit (figure 4(36) of Bell) for

optically printing said image to said recording material (column

5, lines 11-14 of Bell). Exposing developed film onto a strip

of photosensitive printing paper (column 5, lines 11-14 of Bell)

is inherently an optical printing process.

Bell in view of Nakamura does not disclose expressly that

said image forming unit is further constituted by said text data

recorder, which optically prints said text data.

Bernardi discloses a text data recorder (figure 7(43) of

Bernardi) which prints said text data (column 9, lines 3-9 of

Bernardi).

Bell in view of Nakamura is combinable with Bernardi

because they are from the same field of endeavor, namely the

control and processing of audio data. At the time of the

invention, it would have been obvious to a person of ordinary

skill in the art to include the text data recorder taught by

Bernardi in the printer taught by Bell in view of Nakamura. The

motivation for doing so would have been to be able to make

annotations to the resulting printed image from a simple hand-

written card (column 10, lines 35-41 of Bernardi). Therefore,

it would have been obvious to combine Bernardi with Bell in view

of Nakamura.

Bernardi does not disclose expressly that said text data is

printed optically.

Kinoshita disclose optically printing data on a

photosensitive recording material (column 4, lines 58-63 of

Kinoshita).

Bell in view of Nakamura and Bernardi is combinable with

Kinoshita because they are from the same field of endeavor,

namely the control and processing of audio data. At the time of

the invention, it would have been obvious to a person of

ordinary skill in the art to print said alphanumeric text data

taught by Bernardi using optical means, as taught by Kinoshita.

The motivation for doing so would have been to be able to print

the text data directly onto the film (column 5, lines 1-3 of

Kinoshita). Therefore, it would have been obvious to combine

Kinoshita with Bell in view of Nakamura to obtain the invention

as specified in claim 23.

Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (US Patent 5,276,472) in view of Nakamura (US Patent 5,684,262), Bernardi (US Patent 5,692,225) and Spies (US Patent 6,035,273).

Regarding claims 8 and 25: Bell in view of Nakamura does not disclose expressly a text data input unit for inputting text data associated with said image data for representing text; and a text/speech converter for converting said text data into speech data, and sending said speech data to said speech data recorder.

Bernardi discloses a text data input unit (figure 7(62) of Bernardi) for inputting text data (column 10, lines 21-24 of Bernardi) associated with said image data (column 10, lines 6-9 of Bernardi) for representing text (column 10, lines 23-26 of Bernardi).

Bell in view of Nakamura is combinable with Bernardi because they are from the same field of endeavor, namely the control and processing of audio data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the text data input unit taught by Bernardi in the printer taught by Bell in view of Nakamura. The motivation for doing so would have been to be able to make annotations to the resulting printed image from a simple hand-

written card (column 10, lines 35-41 of Bernardi). Therefore,

it would have been obvious to combine Bernardi with Bell in view

of Nakamura.

Bell in view of Nakamura and Bernardi does not disclose

expressly a text/speech converter for converting said text data

into speech data, and sending said speech data to said speech

data recorder.

Spies discloses a text/speech converter (figure 1(32) of

Spies) for converting said text data into speech data (column 4,

lines 60-62 of Spies), and sending said speech data to an output

device (figure 1(10); column 3, lines 20-22 and column 4, lines

3-8 of Spies).

Bell in view of Nakamura and Bernardi is combinable with

Spies because they are from the same field of endeavor, namely

the control and processing of audio data. At the time of the

invention, it would have been obvious to a person of ordinary

skill in the art to include the text/speech converter taught by

Spies to convert the text read by the text data input unit

taught by Bernardi into speech. The motivation for doing so

would have been to provide an audial reproduction of the

annotations (column 5, lines 1-4 of Spies). Therefore, it would

have been obvious to combine Spies with Bell in view of Nakamura

and Bernardi to obtain the invention as specified in claims 8
and 25.

(10) Response to Argument

<u>Regarding page 10, line 13 to page 11, line 2:</u>

Appellant argues that the voice tone converter subjects
speech data, which is associated with an image, to tone
conversion. Appellant alleges that the speech data taught by
Nakamura (US Patent 5,684,262) has no relationship with an
image, and thus the voice tone converter is not taught by Bell
(US Patent 5,276,472) in view of Nakamura.

Examiner responds that, as clearly set forth in the final
rejection, mailed 14 June 2005, it is *Bell* that teaches "speech
data (column 4, lines 4-6 of Bell) associated with said image
data for representing speech (column 4, lines 29-34 of Bell)"
[last two lines of page 7 to page 8, line 1 of said final
rejection]. Nakamura has not been relied upon to teach that the
speech data is associated with the image data. Furthermore,
claim 1 specifically recites "a voice tone converter for
subjecting said speech data to tone conversion". The voice tone
converter of Nakamura does this (figure 1(16) and column 5,
lines 38-41 of Nakamura) [as cited on page 8, lines 7-11 of said
final rejection]. Thus, it is *by combination* that Bell and

Nakamura fully teach claim 1. Furthermore, in response to
Appellant's arguments against the references individually, one
cannot show nonobviousness by attacking references individually
where the rejections are based on combinations of references.
See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re
Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding page 11, lines 3-15:

Appellant argues that the tone conversion of Nakamura is
not desired in Bell.

Examiner responds that Appellant is merely describing
particular intended uses of the overall system taught by
Nakamura, particularly in the context of a karaoke system. The
voice tone conversion taught by Nakamura can clearly be applied
to Bell since, in the context of the photographic system taught
by Bell, voice tone conversion can be performed for the audio
data that is to be added to the photographic film. Furthermore,
the desirability of tone conversion in the system of Bell has
clearly been addressed since there is clear motivation to
combine. "The motivation for doing so would have been to
control the tone level based on the input level (column 5, lines
41-47 of Nakamura), thus improving the recorded audio signal"
[page 8, lines 18-20 of said final rejection]. The mere fact

that the voice tone converter has a different intended use in

Nakamura does not render it unfit to be implemented as part of

the system taught by Bell. Furthermore, the voice tone

converter in Nakamura does not operate with respect to different

modes, as alleged by Appellant. Column 5, lines 38-41 of

Nakamura, as cited by Examiner, clearly states "when the level

of the voice signal is large, the central processing unit **21**

varies the change in the tone in the tone converter **16** to

convert the supplied digital audio signal into a digital audio

signal that is lower in pitch by 50 percent." The voice tone

converter does not provide for a unison effect of voice data as

if two singers were singing. The unison effect is performed by

other aspects of the system of Nakamura.

Furthermore, the test for obviousness is not whether the

features of a secondary reference may be bodily incorporated

into the structure of the primary reference; nor is it that the

claimed invention must be expressly suggested in any one or all

of the references. Rather, the test is what the combined

teachings of the references would have suggested to those of

ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981). In this case, the teachings of Nakamura

with respect to voice tone conversion would have suggested to

one of ordinary skill in the art at the time of the invention

include a voice tone converter in the system of Bell. In both

Bell and Nakamura, speech data is input through a microphone

(figure 3(17) of Bell and figure 1(11) of Nakamura). Both Bell

and Nakamura process the thus input audio data. Nakamura merely

suggests how one of ordinary skill in the art at the time of the

invention can modify Bell such that tone conversion is

implemented in the context of the system of Bell.

Regarding page 11, line 16 to page 12, line 2:

Appellant argues that Bell and Nakamura are not within the

same field of endeavor; and that the processing complexities of

Nakamura are wholly inappropriate for the bar scanning of Bell.

Examiner replies that both Bell and Nakamura are concerned

with the processing and recording of audio data, and are thus

both analogous art. Photographic still cameras are very old in

the art, thus Bell is clearly directed to the processing and

recording of audio data in the context of a photographic still

camera system. Nakamura is also concerned with the processing

and recording of audio data. The present application is also

concerned with the processing and recording of audio data.

Thus, the present application, Bell and Nakamura are all clearly

analogous art.

Furthermore, simply because the voice tone converter taught
by Nakamura is used in the context of a karaoke system does not
render it inoperable with respect to the system taught by Bell.
As stated above, the teachings of Nakamura with respect to voice
tone conversion would have suggested to one of ordinary skill in
the art at the time of the invention include a voice tone
converter in the system of Bell. The "processing complexities"
alleged by Appellant are not a part of the voice tone converter
taught by Nakamura and cited by Examiner.

Regarding page 12, lines 3-11:

Appellant argues that Bell does not teach recited the
speech data output unit since the speech data output in the
system of Bell is not tone converted.

Examiner replies that Appellant is again attempting a
piecemeal analysis of the references, without considering the
combination that has been set forth. Nakamura teaches that the
speech data is tone converted (column 5, lines 38-41 of
Nakamura) [page 8, lines 7-11 of said final rejection]. Thus,
by combination, the output speech data taught by Bell would be
tone converted speech data according to Bell in view of Nakamura
[page 8, lines 17-18 of said final rejection].

Regarding page 12, lines 12-18:

Appellant argues that Examiner has asserted that no motivation or suggestion to combine is required for a *prima facie* case of obviousness.

Examiner replies that Appellant has clearly taken Examiner's statements out of context. Examiner clearly stated, in response to a prior argument by Appellant, that it is not required that the motivation or suggestion to combine be found in the *primary* reference (in this case, Bell). The motivation or suggestion to combine may be found in a *secondary* reference (Nakamura), as in the case of the final rejection, or in the knowledge that one of ordinary skill in the art at the time of the invention would have had. Furthermore, the motivation to combine Bell and Nakamura has clearly been set forth in the statement "[t]he motivation for doing so would have been to control the tone level based on the input level (column 5, lines 41-47 of Nakamura), thus improving the recorded audio signal" [page 8, lines 18-20 of said final rejection]. Thus, there is clearly motivation to combine Bell and Nakamura.

Regarding page 12, line 19 to page 13, line 15:

Appellant argues that substantial modification to the
principle operation Bell would be required, and thus the
combination is an exercise in impermissible hindsight.

Examiner replies that Bell records audio data to a magnetic
layer on photographic film. Including a voice tone converter in
no way alters this principle of operation. The inclusion of a
voice tone converter simply allows a user to alter the voice
signal that is input and then placed on the magnetic media of
the photographic film. Examiner is not "picking and choosing"
as alleged by Appellant, but is merely including an additional
unit which performs a conversion on the voice data to be input.
Not only is this clearly within the capability of one of
ordinary skill in the art at the time of the invention, but one
of ordinary skill in the art at the time of the invention would
clearly have been motivated to make such a modification since,
as set forth by Nakamura, a voice tone converter would allow one
to control the tone level based on the input level (column 5,
lines 41-47 of Nakamura), thus improving the recorded audio
signal.

By overly focusing on the fact that the tone converter of
Nakamura is implemented in the context of a karaoke system,
Appellant loses sight of the fact that a voice tone converter is

simply a piece of circuitry (or corresponding software) that

creates an alteration in a voice wave signal. In both the

karaoke system of Nakamura and the photographic system of Bell,

an individual speaks into a microphone. In both Bell and

Nakamura, there is a voice signal that can be modified or

processed and then recorded. The voice tone converter taught by

Nakamura is simply a piece of circuitry (or corresponding

software) and does not care if the person at the input

microphone is attempting to sing a song on a karaoke system or

is trying to talk about the picture that has just been taken.

Audio data is audio data.

Regarding page 13, line 16 to page 15, line 2:

Appellant argues that the voice tone converter of Nakamura

imparts a unison effect and that the tone converted voice

signals of Nakamura are not associated with an image. Appellant

further argues that the "extensive process of Nakamura" would

not be retained on reproduction.

Examiner replies that, firstly, Nakamura has not been

relied upon to teach that speech data is associated with an

image. Bell is relied upon to teach that speech data is

associated with an image (column 4, lines 4-6 and lines 29-34 of

Bell) [last two lines of page 7 to page 8, line 1 of said final
rejection].

Secondly, Appellant is arguing with respect to the entire
system of Nakamura, and not with respect to the voice tone
converter taught by Nakamura. As such, Appellant is attempting
to bodily incorporate the entire system of Nakamura instead of
considering what the combined teachings of the references would
have suggested to those of ordinary skill in the art. See *In re
Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The voice tone
converter taught by Nakamura is set forth on column 5, lines 38-
41 of Nakamura, as cited on page 8, lines 7-11 of said final
rejection. The cited passage of Nakamura states, "when the
level of the voice signal is large, the central processing unit
21 varies the change in the tone in the tone converter **16** to
convert the supplied digital audio signal into a digital audio
signal that is lower in pitch by 50 percent." Thus, combined
with Bell, the voice tone converter taught by Nakamura lowers
the pitch of the voice signal input into the microphone of the
system of Bell by 50 percent. Again, all that the voice tone
converter taught by Nakamura does is alter the pitch if the
voice signal is too large. The portion of Nakamura relied upon
by Examiner, which teaches the voice tone converter and which
one of ordinary skill in the art at the time of the invention

would have used to modify the system of Bell, does not have
anything to do with combining voices in unison. The voice tone
converter of Nakamura simply lowers the pitch of the input audio
signal if the audio signal is large. Clearly, such a simple
operation would be retained upon reproduction. In fact, such a
simple operation would clearly improve the reproduction of the
voice signal recorded on the magnetic layer of the film taught
by Bell.

Regarding page 15, lines 3-15:

Appellant argues that Nakamura goes into depth regarding
the three method of modifying a voice signal, and thus adding
the voice tone converter is not trivial.

Examiner replies that the methods of modifying a voice
signal discussed in Nakamura are not performed by the voice tone
converter taught by Nakamura. As stated above, the voice tone
converter taught by Nakamura lowers the pitch of the voice
signal input into the microphone of the system of Bell by 50
percent. Not only is this a trivial process, but clearly within
the skill of one of ordinary skill in the art at the time of the
invention. Furthermore, motivation to combine the voice tone
converter taught by Nakamura with the system of Bell is provided
in Nakamura. "The motivation for doing so would have been to

control the tone level based on the input level (column 5, lines
41-47 of Nakamura), thus improving the recorded audio signal"
[page 8, lines 18-20 of said final rejection]. Finally, the
standard of obviousness does not require that the modification
be trivial, but merely within the level of ordinary skill in the
art at the time of the invention, which has been demonstrated.

Regarding page 16, line 1 to page 17, line 17:

Appellant argues that Examiner asserts that Leveque (US
Patent 5,495,468) teaches adding conversion data to the sound
before the data is output and that simply adding small audio
processing steps to the processing of an audio signal before
output is a trivial matter for one of ordinary skill in the art.
Appellant further argues that implementing the audio processing
step taught by Leveque is not a trivial matter.

Examiner replies that, as clearly set forth in said final
rejection, Examiner has asserted that "Leveque discloses sending
conversion data (figure 5a(CT_1) and column 5, lines 14-17 of
Leveque) to an output device (column 5, lines 25-29 of Leveque);
and that the audio data is constituted by said speech data
before being converted (figure 5a(CV_1); and column 5, lines 2-4
and lines 10-12 of Leveque) and said conversion data (column 5,
lines 25-29 of Leveque)" [page 10, line 29 to page 11, line 4 of

said final rejection], as is recited in claim 3. Furthermore, while the audio processing steps themselves may or may not be complicated, the audio processing steps are fully disclosed and have been fully implemented in the references cited. While the *creation* of the audio processing step is not trivial, simply inserting an audio processing element or step that has already been designed is trivial for one of ordinary skill in the art.

Furthermore, even if including the processing steps taught by Leveque were not trivial, said steps are still taught by Leveque and adequate motivation to combine the references is provided in Leveque itself. As Examiner has clearly stated, "At the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the conversion data along with the audio data before being converted, as taught by Leveque, said conversion data and audio data being the conversion data and audio data taught by Bell in view of Nakamura. The motivation for doing so would have been that the conversion data can be saved in a different frequency band than the audio data (column 5, lines 12-17 of Leveque) and can therefore be saved in the same analog storage space as the audio data" [page 11, lines 11-20 of said final rejection]. The standard of obviousness does not require that the modification

be trivial, but merely within the level of ordinary skill in the
art at the time of the invention, which has been demonstrated.

Appellant argues that, in Leveque, there is no speech data
prior to conversion as claimed; and that, although the
compressed voice signals and control tones are output to a
transmission medium, a transmission medium is not the printer as
originally cited by Examiner.

Examiner replies that Appellant is again engaging in a
piecemeal analysis of the references and thus ignoring the
combination clearly set forth in said final rejection. Bell
teaches that there is initially speech data sent to a speech
data recorder (column 4, lines 13-17 of Bell). Bell also
teaches a printer (figures 3 and 4 of Bell) for printing an
image to recording material (figure 4(35) of Bell) according to
image data (column 5, lines 11-14 of Bell), as set forth in the
arguments regarding claim 1 [page 7, lines 26-29 of said final
rejection]. Leveque teaches that the conversion data is sent to
an output device. *By combination* with Bell in view of Nakamura,
the output device is clearly the printer.

Appellant argues that there is no teaching or suggestion
that the conversion data of Leveque should be output to the
printer of Bell; and that it is unclear how the conversion data
of Leveque which is transmitted over a communications channel

using Lincompex would be printed on a printer, and thus Examiner
is engaging in impermissible hindsight.

Examiner replies that a printer receives data over a
communication channel, such as a printer cable. By combining
Leveque with Bell and Nakamura, the printer taught by Bell is
merely receiving the additional data that is taught by Leveque.
Since printing out received data is taught by Bell, the
additional data to be output is taught by Leveque, and the
motivation to combine the references has clearly been set forth,
no impermissible hindsight has been employed.

Appellant argues that merely because Nakamura desires
compensation for tone variation and Leveque desires saving
conversion data in a different frequency band than audio data,
would not motivate one of ordinary skill in the art to modify
the printer of Bell.

Examiner replies that compensating for tone variations, as
taught by Nakamura, is clearly a desirable result since audio
input are generally not perfectly balanced. By compensating for
tone variations, as taught by Nakamura, an improved audio signal
will result. Additionally, as set forth in said final rejection
[page 11, lines 16-20 of said final rejection], saving
conversion data in a different frequency band than audio data
will allow the conversion data to be saved in the same analog

storage space as the audio data. Thus, the conversion data can
be read alongside the audio data and the conversion data and
analog data can thus be stored more compactly and more
contiguously. Reducing the amount of required physical storage
space is clearly a desirable result.

Regarding page 17, line 18 to page 18, line 2:

Appellant argues that claims 17-18 should be allowed by
virtue of their dependency from claim 14.

Examiner replies that, since claim 14 has been demonstrated
to be rendered obvious over the prior art, claims 17-18 are not
therefore patentable based on their dependency from claim 14.

Regarding page 18, line 3 to page 19, line 10:

Appellant argues that Examiner has not considered Hatada
(US Patent 4,270,853) in its entirety and that Hatada teaches
away from Bell since Bell identifies the deficiencies of the
Hatada reference, namely that Hatada is an instant print camera
and Bell teaches that instant print cameras are not desirable.

Examiner replies that Hatada has not been relied upon for
the teachings regarding instant printing. Hatada has been
relied upon for the teachings regarding magnetic recording.
Since the system taught by Bell in view of Nakamura is not an

instant camera, the alleged problems with combining Hatada with

Bell in view of Nakamura do not exist. Furthermore, while

Examiner must look at the references in their entirety, this

does not mean that every element of the references have to be

bodily incorporated. The test for obviousness is not whether

the features of a secondary reference may be bodily incorporated

into the structure of the primary reference; nor is it that the

claimed invention must be expressly suggested in any one or all

of the references. Rather, the test is what the combined

teachings of the references would have suggested to those of

ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981).

The teaching of Hatada that have been relied upon are with

respect to details of the magnetic recording medium, and not

teachings with respect to instant printing. If Examiner (for

example) had instead argued that the system of Bell in view of

Nakamura were to be implemented in an instant printing

environment, as per the teachings of Hatada, then Appellant

would be correct in the assessment that Bell teaches away from a

combination with Hatada. However, such is clearly not the case.

Since Hatada has been relied upon for the teachings with respect

to details of the magnetic recording medium, and not with

respect to instant printing, the teachings of Hatada that have

been relied upon can clearly be combined into the system of Bell

in view of Nakamura.

   Regarding page 19, line 11 to page 20, line 6:

   Appellant argues that claims 4-7, 20-22 and 24 are

patentable owing to their dependency from claims 1 and 14.

   Examiner replies that, since claims 1 and 14 have been

demonstrated to be rendered obvious over the prior art, claims

4-7, 20-22 and 24 are therefore not patentable by reason of

their dependencies.

   Appellant argues that the combination of Bernardi (US

Patent 5,692,225) with Bell and Nakamura is deficient since the

speech is original as recorded by the user, and is thus

difficult to understand aurally. Therefore, Bernardi is

contrary to the present invention.

   Examiner replies that this is mere conjecture on the part

of Appellant and Appellant supplies no substantive proof to the

allegation that the speech that is played back according to the

system of Bell in view of Nakamura is difficult to understand

aurally. In the system of Bell in view of Nakamura, speech is

recorded by a microphone and tone converted so as to not be too

loud. The speech/text converter taught by Bernardi simply

converts the thus recorded speech into text. There is nothing

in Bell, Nakamura or Bernardi that teaches or suggests that the
recorded speech would be difficult to understand aurally. In
fact, such a presumption goes against the very nature of the
system taught by Bell. Since the playback of recorded speech is
clearly desired in Bell, it would make no logical sense to then
have the recorded speech be difficult to understand aurally.
Such would defeat the entire purpose of recording the speech
data in the first place.

Regarding page 20, lines 7-18:

Appellant argues that claim 23 is patentable owing to its
dependence from claim 17, claim 8 is patentable owing to its
dependence from claim 1, and claim 25 is patentable owing to its
dependence from claim 14.

Examiner replies that, since claims 1, 14 and 17 have been
demonstrated to be rendered obvious to one of ordinary skill in
the art at the time of the invention, claims 8, 23 and 25 are
therefore not patentable based on their respective dependencies.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified
by the examiner in the Related Appeals and Interferences section
of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

James A. Thompson

27 March 2006

Conferees:

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